CLAIM AMENDMENTS:

Pending Claims

Claim 1 (Currently Amended): A method for noninvasive ECG detection and diagnosis, comprising the following steps:

acquiring high-resolution ECG data from a patient, the resolution being equal to or better than about 1 microvolt for the least significant bit of said ECG data;

processing said acquired data in accordance with two or more different ECG analysis algorithms in respective software modules of a data processor; [[and]]

processing the outputs of said respective software modules in said data processor to derive deriving a prediction score for a particular clinical end point as a function of the respective results of said two or more ECG analysis algorithms; and

outputting signals representing said prediction score from said data processor to an output device.

Claim 2 (Original): The method as recited in claim 1, further comprising the step of training a predictive model with clinically confirmed data for both input and output, wherein said predictive model is used for said prediction score derivation.

Claim 3 (Original): The method as recited in claim 1, wherein said particular clinical end point is sudden cardiac death.

Claim 4 (Original): The method as recited in claim 1, wherein said particular clinical end point is sustained ventricular tachycardia.

Claim 5 (Original): The method as recited in claim 1, wherein said particular clinical end point is ischemia.

Claim 6 (Original): The method as recited in claim 1, wherein said ECG analysis algorithms comprise late potential, T wave alternans and QT dynamicity algorithms.

Claim 7 (Original): The method as recited in claim 1, wherein said ECG analysis algorithms comprise QT dispersion and intra-QRS algorithms.

Claim 8 (Original): The method as recited in claim 1, wherein said ECG analysis algorithms comprise heart rate variability, QT dispersion and QT dynamicity algorithms.

Claim 9 (Original): The method as recited in claim 1, wherein said data acquisition step uses the X, Y and Z leads of a Frank lead system.

Claim 10 (Original): The method as recited in claim 9, wherein one of said ECG analysis algorithms is a T wave alternans algorithm comprising the following steps:

dividing the high-resolution ECG data into even beat and odd beat groups;

averaging beats in said even and odd beat groups separately;

determining the variance of T wave morphology of all even beats for each of said X, Y, Z leads;

determining the variance of T wave morphology of all odd beats for each of said X, Y, Z leads; and

determining the variance of T wave morphology between even and odd averaged beats for each of said X, Y, Z leads.

Claim 11 (Original): The method as recited in claim 9, wherein said data acquisition step also uses leads of a standard 12-lead system.

Claim 12 (Currently Amended): The method as recited in claim 11, wherein one of said ECG analysis algorithms is a QT dispersion algorithm comprising the following steps:

computing a respective QT dispersion value for each of a multiplicity of successive segments of 12-lead ECGs; and

computing [[an]] a mean or median value of said QT dispersion values.

Claim 13 (Currently Amended): A system for noninvasive ECG detection and diagnosis, comprising: a multiplicity of electrodes applied to a patient, a data acquisition system for acquiring high-resolution ECG data from the patient, the resolution being equal to or better than about 1 microvolt for the least significant bit of said ECG data; and a processor programmed to process said acquired data in accordance with two or more different ECG analysis algorithms, and derive a prediction score for a particular clinical end point as a function of the respective results of said two or

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more ECG analysis algorithms.

Claim 14 (Original): The system as recited in claim 13, wherein said processor is programmed to use a predictive model for said prediction score derivation, said predictive model being trained with clinically confirmed data for both input and output.

Claim 15 (Original): The system as recited in claim 13, wherein said particular clinical end point is sudden cardiac death.

Claim 16 (Original): The system as recited in claim 13, wherein said particular clinical end point is sustained ventricular tachycardia.

Claim 17 (Original): The system as recited in claim 13, wherein said particular clinical end point is ischemia.

Claim 18 (Original): The system as recited in claim 13, wherein said ECG analysis algorithms comprise late potential, T wave alternans and QT dynamicity algorithms.

Claim 19 (Original): The system as recited in claim 13, wherein said ECG analysis algorithms comprise QT dispersion and intra-QRS algorithms.

Claim 20 (Original): The system as recited in claim 13, wherein said ECG analysis algorithms comprise heart rate variability, QT dispersion and QT dynamicity algorithms.

Claim 21 (Original): The system as recited in claim 13, wherein said data acquisition system comprises the X, Y and Z leads of a Frank lead system.

Claim 22 (Original): The system as recited in claim 21, wherein one of said ECG analysis algorithms executed by said processor is a T wave alternans algorithm comprising the following steps:

dividing the high-resolution ECG data into even beat and odd beat groups;

averaging beats in said even and odd beat groups separately;

determining the variance of T wave morphology of all even beats for each of said X, Y, Z leads;

determining the variance of T wave morphology of all odd beats for each of said X, Y, Z leads; and

determining the variance of T wave morphology between even and odd averaged beats for each of said X, Y, Z leads.

Claim 23 (Original): The system as recited in claim 21, wherein said data acquisition system further comprises leads of a standard 12-lead system applied to the patient.

Claim 24 (Currently Amended): The system as recited in claim 23, wherein one of said ECG analysis algorithms executed by said processor is a QT dispersion algorithm comprising the following steps:

computing a respective QT dispersion value for each of a multiplicity of successive segments of 12-lead ECGs; and

computing [[an]] a mean or median value of said QT dispersion values.

Claim 25 (Currently Amended): A method for noninvasive ECG detection and diagnosis, comprising the following steps:

(a) acquiring high-resolution ECG data from a patient using the X, Y and Z leads of a Frank lead system, the resolution being equal to or better than about 1 microvolt for the least significant bit of said ECG data;

(b) dividing the high-resolution ECG data into even beat and odd beat groups;

(c) averaging beats in said even and odd beat groups separately;

(d) determining the variance of T wave morphology of all even beats for each of said X, Y, Z leads;

(e) determining the variance of T wave morphology of all odd beats for each of said X, Y, Z leads;

(f) determining the variance of T wave morphology between even and odd averaged beats for each of said X, Y, Z leads; and

(g) determining T wave alternans as a function of the results of steps (d)-(f) by analysis of variance.

Claim 26 (Currently Amended): A system for noninvasive ECG detection and diagnosis, comprising: a multiplicity of electrodes applied to a patient, a data

acquisition system for acquiring high-resolution ECG data from the patient using the X, Y and Z leads of a Frank lead system, the resolution being equal to or better than about 1 microvolt for the least significant bit of said ECG data; and a processor programmed to process said acquired data in accordance with a T wave alternans algorithm comprising the following steps:

(a) dividing the high-resolution ECG data into even beat and odd beat groups;

(b) averaging beats in said even and odd beat groups separately;

(c) determining the variance of T wave morphology of all even beats for each of said X, Y, Z leads;

(d) determining the variance of T wave morphology of all odd beats for each of said X, Y, Z leads;

(e) determining the variance of T wave morphology between even and odd averaged beats for each of said X, Y, Z leads; and

(f) determining T wave alternans as a function of the results of steps (c)-(e) by analysis of variance.